Rayat Shikshan Sanstha's

YASHAVANTRAO CHAVAN INSTITUTE OF SCIENCE, SATARA

(AUTONOMOUS)

Lead college

of

Karmaveer Bhaurao Patil University, Satara

Syllabus For

Master of Science

Part - II

ANIMATION SCIENCE

Syllabus to be implemented w.e.f. June 2024

as Per NEP-2020

Preamble:

Animation science is the most emerging and fast-growing industries in India and the whole world is taking notice of the efficiency, skill, and talent available in the country in these fields. The introduction of formal and professional level training programs and courses at the university and college levels is necessary to support the continued expansion of these industries and to produce highly qualified and trained professionals. This industry includes an important portion of animation, and this degree is being offered to train people in the field of animation, which is now an integral aspect of many different industries and finds applications in fields other than animation science. For this revolution in technology, scientific faculty students need also be prepared. The students from science faculty should also be competent for this change in the technology.

Credit Framework for M.Sc. II

Structure of Course: M.Sc. – II Semester – III

Level	Semester	Course Code	Course Title	No. of Lectures Per Week	Credits
		Discipline Specific Courses (Mandatory)			
6.5	III	MAST 531	Advanced 2d Production Process	4	4
		MAST 532	Game Design	4	4
		MAST 533	Advanced Visual Effects	4	4
		Discipline Specific Elective (Choose Any one among two)			
		MAST 534 E-I MAST 534 E-II	E-I) Business Development E- II) Intellectual Property Rights for Media	2	2
		MASP 535	Research Project	12	6
		MASP 536	LAB- III (based on MAST-531, 532 and 533)	4	2
Total					**22**

Structure of Course: M.Sc. – II Semester –IV

Level	Semester	Course Code	Course Title	No. of Lectures Per Week	Credits
		Discipline Specific Courses (Mandatory)			
6.5	IV	MAST 541	3d Game Development	4	4
		MAST 542	Animation for AR And VR	4	4
		MAST 543	Advanced Compositing	4	4
		Discipline Specific Elective (Choose Any One Among Two)			
		MAST 544 E-I MAST 544 E-II	E-I) Creative Advertising & Branding E-II) UI UX Designing	4	4
		MASP 545	On Job Training (OJT)	8	4
		MASP 546	LAB- IV (based on MAST-541, 542 and 543)	4	2
Total					**22**

SEMESTER III

MAST 531: ADVANCED 2D PRODUCTION PROCESS

Course Objectives: student should be able to:

1) understand 2D traditional pre-production and production process.
2) study the system of columns and levels in detail.
3) aware of freeware applications for making animation.
4) learn drawings for traditional & digital 2D animation production.

Credits=4	MAST 531: ADVANCED 2D PRODUCTION PROCESS	No. of hours: 60
UNIT I	**Production Workflow & Interface**	**15**
	Traditional Workflow, Paperless Workflow, Interface Overview, Using Rooms, Room Panes, Customizing the Interface Appearance, Managing Projects, Setting up Projects, Setting Up a Scene, Scanning Paper Drawings, Saving and Loading Cleanup Settings	
UNIT II	**Drawing Tools & Applying Effects**	**15**
	Drawing Animation Levels, Drawing Tools, Changing the Canvas Size, Editing Drawings, Animation Techniques, Editing Animation Levels, Applying Effects, Create animations using Plastic tool.	
UNIT III	**Palettes and Styles**	**15**
	Managing Palettes and Styles, The Palette Editor, Animating Palettes, Editing Styles, Painting Tools, Using a Color Model, Working in Xsheet/Timeline.	
UNIT IV	**Working with Rendering**	**15**
	Working with Columns/Layers, Working with Cells, Working Globally with Frames, Creating a Soundtrack, Lip Syncing, Saving and Loading Scenes, Creating Movements, Using the Skeleton Tool, Previewing and Rendering	

Course Outcomes: After completion of syllabus, student will be able to:

1) describe concepts, storyboarding and production pipeline of 2 dimensional animations.
2) identify Principles of animation for 2D animation project.
3) differentiate sfx effects for 2D Animation project.
4) create 2D animation render video.

References:

1. *OpenToonz Documentation Release 1.6.0, Oct 16, 2022 (anonymous).*

2. *ToonzPaperlessWorkflow, for Toonzharlequin & ToonzBravo.*
3. *Preston Blair, "Cartoon Animation with Revised Edition, Learn techniques for drawing and animating cartoon characters", November 2020.*
4. *Steve Roberts, "Character Animation Fundamentals: Developing Skills for 2D and 3D Character Animation", 20 September 2011*

MAST 532: GAME DESIGN

Course Objectives: student should be able to:

1) understand complex game API software environment with Object-Oriented Programming skills
2) study of innovative ideas and technics for game designing.
3) aware of principles guiding visual, audio.
4) learn foundational theories and approaches.

Credits=4	MAST 532: GAME DESIGN	No. of hours: 60
UNIT I	**Interface**	**15**
	Introduction of Unity, Unity Project, Unity Projects, Assets, and Scenes, Assets and Project Files Navigating Scenes and Viewports.	
UNIT II	**Scripting**	**15**
	Game Objects, Transforms, and Components Cameras, Scripting and the Unity API, Performance, Profiling, and the Stats Panel	
UNIT III	**Materials and Textures**	**15**
	Materials and Textures, Mesh Renderers, Shaders, Materials for 2D Games, Method 1: Use White Ambient Light Method 2: Use Light-Immune Shaders	
UNIT IV	**Two Dimensional games**	**15**
	Creating Textures Power-2 Dimensions, Retain Quality, Expand Alpha Channels for Transparency	

Course Outcomes: After completion of syllabus, student will be able to:

1) describe the scripting of game designing.
2) identify the materials for 2d games.
3) utilize the process of building the game for publication.
4) describe the basic game props and environment scene.

References:

1. *Sue Blackman "Beginning 3D Game Development with Unity 4: All-in-One, Multi-Platform Game Development" by 2013.*
2. *Jon Manning, Paris Buttfield-Addison, and Tim Nugent, Unity Game Development Cookbook: Essentials for Every Game, O'Reilly Media, Inc.*
3. *Jared Halpern, Developing 2D Games with Unity: Independent Game Programming with C#, Apress, Final Editio.*
4. *Frank D. Luna "Introduction to 3D Game Programming with DirectX® 12" 2016.*

MAST 533: ADVANCED VISUAL EFFECTS

Course Objectives: student should be able to:

1) classify tracking techniques.
2) recognize camera extraction.
3) understand the procedure of 2d & 3d tracking.
4) interpret the process of compositing packages.

Credits=4	MAST 533 : ADVANCED VISUAL EFFECTS	No. of hours: 60
UNIT I	**Working with Interface**	15
	Understanding workflow of software, working with multiple image file format, compositing in 3D, Nuke Studio environment, customizing workspace, Preferences, Using the Compositing Environment, Toolbar, Menu Bar, and Content Menus, Working with Nodes, Customizing the Node Display, Using the Tab Menu, Navigating Node Graph, Properties Panels, customizing a Node's Presets, Animating Parameters, Dope Sheet.	
UNIT II	**Assembly in Nuke**	15
	Compositing Viewers, Viewer Controls, Viewer Selection Modes, Soft Selection, Pixel Aspect Ratio, Full-frame processing, Region of Interest (ROI), Viewer Overlays and Input Processes, File Browser, Nuke Studio's Timeline Environment, Shots, Clip and Shot Properties, Setting Clip Frame Rates, Ingesting Media, Color-coding Source Clips and Shots, Reconnecting and Refreshing Clips, Timeline Playback Tools, Playback Controls, Timeline Viewer Tools, In and Out Markers.	
UNIT III	**Compositing with Nuke**	15
	Working with Colorspaces, Scopes, Histogram, Waveform, Vector, Proxy Mode, Reformatting Image Sequences, Reformatting Elements, Cropping Elements, Understanding Channels and Layers, Selecting Masks, Merging Images, Merge Operations, Generating Contact Sheets, Removing Noise with Denoise, Fine Tuning, Keying with ChromaKeyer, Improving Mattes, Color Replacement, Keying with Cryptomatte, Keying with Keylight, Advanced Keying, View.	
UNIT IV	**Rendering in Nuke**	15
	Biasing, PreBlur and Tuning, Screen Processing, Clean BG Noise, using RotoPaint, Drawing Paint Strokes, Drawing Shapes, Tracking and Stabilizing, Automatic vs. Keyframe Tracking, Transforming Elements, Wrapping images, working with color,	

	Filtering and Spatial effects, creating effects, analyzing and matching clips, classic 3D composition, importing objects from other application, USD in nuke, deep compositing, Audio in Nuke, previews and rendering, script editor and python, Advanced composition.	

Course Outcomes: After completion of syllabus, student will be able to:

1) design promotional Products.
2) understand Film Criticism and reviews.
3) demonstrate Photographic Principles.
4) differentiate visual effects.

References:

1. *Brinkmann, Ron. The art and science of digital compositing: Techniques for visual effects, animation and motion graphics. Morgan Kaufmann, 2008.*
2. *Freeman, Heather D. The Moving Image Workshop: Introducing animation, motion graphics and visual effects in 45 practical projects. Bloomsbury Publishing, 2015.*
3. *Christiansen, Mark. Adobe After Effects CC Visual Effects and Compositing Studio Techniques. Adobe Press, 2013.*
4. *Goulekas, Karen. Visual Effects in a Digital World: A Comprehensive Glossary of over 7000 Visual Effects Terms. Elsevier, 2001.*

MAST 534 E I: BUSINESS DEVELOPMENT

Course Objectives: student should be able to:

1) study the types of Animation Industry
2) understand Business Fundamentals and techniques.
3) aware of fundamental Marketing and Promotion.
4) learn Intellectual Property Management.

Credits=4	MAST 534 E I : BUSINESS DEVELOPMENT	No. of hours: 30
UNIT I	**Introduction to Animation Business**	**15**
	Overview of the animation industry, Importance of business development in animation, Key players in the animation ecosystem, Trends and challenges in the animation business, Market Analysis and Target Audience, Conducting market research in the animation industry, Identifying target audiences for different types of animation content, Understanding audience preferences and trends, Analyzing competitors and industry benchmarks	
UNIT II	**Business Strategies and Planning**	**15**
	Developing a business plan for an animation project or company, Identifying revenue streams in animation (licensing, merchandising, distribution, etc.), Creating marketing and promotional strategies for animation projects, Budgeting and financial planning for animation production, Networking and Partnerships, Building a professional network in the animation industry, Collaborating with other companies, studios, and organizations, Negotiating deals and partnerships in animation business, Leveraging industry events and conferences for networking opportunities	

Course Outcomes: After completion of syllabus, student will be able to:

1) study Business Acumen.
2) aware of proficiency in identifying and utilizing distribution channels and monetization models.
3) learn marketing and Promotion Strategies.
4) understand Professional Networking and industry collaborations.

References:

1. *Business Development For Dummies By Anna Kennedy.*
2. *Business Development Begins Here By Tom Watkin* .

3. *Business Development Body of Knowledge By Anthony Gray.*
4. *Business Development For Dummies by Kennedy, Anna.*

MAST 534 E II: INTELLECTUAL PROPERTY RIGHTS FOR MEDIA

Course Objectives: student should be able to:

1) understand fundamental aspects of Intellectual property Rights.
2) study basic knowledge of patents, patent regime in India and abroad and registration.
3) Aware of copyrights and its related rights and registration aspects.
4) learn trademarks and registration aspects.

Credits=4	**MAST 534 E II : INTELLECTUAL PROPERTY RIGHTS FOR MEDIA**	**No. of hours: 30**
UNIT I	**Introduction to Intellectual Property**	**15**
	Identification of intellectual property, Types of intellectual property and their legal framework, Importance of IP for SMEs, Monetizing IP, Careers in Intellectual Property, Theories of IPR.	
UNIT II	**Patents, Copyrights, Trademarks**	**15**
	Patents - Elements of Patentability: Novelty, Non-Obviousness (Inventive Steps), Industrial Application - Non - Patentable Subject Matter - Registration Procedure, Rights and Duties of Patentee, Assignment and license , Restoration of lapsed Patents, Surrender and Revocation of Patents, Infringement, Remedies & Penalties - Patent office and Appellate Board. Copyrights- Nature of Copyright - Subject matter of copyright: original literary, dramatic, musical, artistic works; cinematograph films and sound recordings - Registration Procedure, Term of protection, Ownership of copyright, Assignment, and license of copyright - Infringement, Remedies & Penalties – Related Rights - Distinction between related rights and copyrights, Piracy under Copyright Law, Copyright in Cyberspace, Copyrightability of Movie Titles. Trademarks- Concept of Trademarks - Various kinds of marks (brand names, logos, signatures, symbols, well known marks, certification marks and service marks) - Non-Registrable Trademarks - Registration of Trademarks - Rights of holder and assignment and licensing of marks - Infringement, Remedies & Penalties - Trademarks registry and appellate board	

Course Outcomes: After completion of syllabus, student will be able to:

1) explain intellectual property laws and regulations relevant to media industry.
2) analyze potential intellectual property issues in media production.
3) describe Rights and Duties of Patentee.
4) identify Ownership of copyright.

References:

1. *Nithyananda, K V. (2019). Intellectual Property Rights: Protection and Management. India, IN:Cengage Learning India Private Limited.*
2. *Neeraj, P., & Khusdeep, D. (2014). Intellectual Property Rights. India, IN: PHI learning Private Limited.*
3. *Ahuja, V K. (2017). Law relating to Intellectual Property Rights. India, IN: Lexis Nexis.*
4. *Bodenheimer, Jurisprudence – The Philosophy and Method of Law (1996) Universal, Delhi*

MASP 535: Research Project (6 Credits)

Students will undertake research in specific area of his Major/Core with an advisory supported by a teacher/Faculty member. Students are required to take 6 credit Research Project for semester III under the guidance of faculty members.

MASP 536 Practical (Based on MAST 531,532,533 courses)

Course Objectives: Student should be able to:-

1) classify tracking techniques.
2) recognize camera extraction.
3) learn indexing and slicing to access data in Python programs.
4) aware of structure and components of a Python program.

Credits=2	SEMESTER-III **MASP 536**	**No. of hours per unit 30 Hrs.**
	1) Tracing characters and backgrounds with different layers in opentoonz. 2) Eye blinking & lip synchronization in opentoonz. 3) Facial expressions dialogue. 4) Parallax camera movement animation with mountain view & city. 5) Basic human walk cycle. 6) Basic Animal walk cycle. 7) Sneak Thief walk cycle. 8) Human run cycle. 9) Animal run cycle. 10) Create a scene with action & dialogue. 11) Import character in Unity Software. 12) Animation character in Unity Software. 13) Apply to material in Unity Software. 14) Create environment background in Unity Software. 15) Reading in footage and project setting in Nuke. 16) Remove green screen using nuke software. 17) Creating a Tornado effect in Nuke. 18) Creating a live action torch shot with animated meshes. 19) Compositing fire in nuke. 20) Rotoscoping with Nuke.	

Course outcomes: student will be able to:

1) utilize user design principle for the designing of user interface.

2) identify different interaction styles.

3) differentiate python program with control flow statements.

4) describe proficiency in the handling of data structure and function.

References:

1. *Preston Blair, "Cartoon Animation with Revised Edition, Learn techniques for drawing and animating cartoon characters", November 2020.*
2. *Steve Roberts, "Character Animation Fundamentals: Developing Skills for 2D and 3D Character Animation", 20 September 2011*
3. *Christiansen, Mark. Adobe After Effects CC Visual Effects and Compositing Studio Techniques. Adobe Press, 2013.*
4. *Goulekas, Karen. Visual Effects in a Digital World: A Comprehensive Glossary of over 7000 Visual Effects Terms. Elsevier, 2001.*

SEMESTER IV

MAST 541: 3D GAME DEVELOPMENT

Course Objectives: student should be able to:

1) understand the principles of game design and development.
2) study the fundamentals of 3D modelling and animation.
3) aware of the use of game development tools such as unity.
4) learn immersive game environments through the integration of graphics, sound and physics.

Credits=4	MAST 541: 3D GAME DEVELOPMENT	No. of hours: 60
UNIT I	**Unity UI Basics—Getting Started**	**15**
	Introduction , Installing Unity and Starting Up, The Layout, Scene View, Game Window, Hierarchy View, Project View, Inspector, Toolbar, Menus, Assets, GameObject, Component, Creating Simple Objects, Selecting and Focusing, Transforming Objects, Snaps, Scene Gizmo, Lights, 3D Objects, Materials	
UNIT II	**Scripting: Getting Your Feet Wet**	**15**
	What Is a Script? Components of a Script, Anatomy of a Function, Printing to the Console, Conditionals and State, Order of Evaluation.	
UNIT III	**Terrain Generation: Creating a Test Environment**	**15**
	Creating Environments, The Terrain Engine, Painting Textures, Anti-Aliasing, Importing UnityPackages, Bend for Detail Meshes, Terrain Settings, Terrain Settings, Fog,	
UNIT IV	**Imported Assets**	**15**
	3D Art Assets, Import Settings, Importing Complex Hierarchies with Animations, Setting Up Materials, Shadows,	

Course Outcomes: After completion of syllabus, student will be able to:

1) identify design and develop 3D games from concept to completion.
2) utilize industry standard game engines and development tools.
3) differentiate 3D modelling, animation and texturing techniques.
4) describe game testing, debugging and quality assurance processes.

References:

1. *Sue Blackman "Beginning 3D Game Development with Unity 4: All-in-One, Multi-Platform Game Development" by 2013.*
2. *Jon Manning, Paris Buttfield-Addison, and Tim Nugent, Unity Game Development Cookbook: Essentials for Every Game, O'Reilly Media, Inc.*

3. *Jared Halpern, Developing 2D Games with Unity: Independent Game Programming with C#, Apress, Final Edition.*
4. *Frank D. Luna "Introduction to 3D Game Programming with DirectX® 12" 2016.*

MAST 542: ANIMATION FOR AR AND VR

Course Objectives: student should be able to:

1) understand the principles and techniques of animation specific to AR and VR environments..
2) learn how to create immersive and interactive experiences through animation in AR and VR
3) study the use of animation tools and software platforms tailored for AR and VR development.
4) aware of the unique challenges and opportunities posed by designing animations for spatial computing.

Credits=4	MAST 542: ANIMATION FOR AR AND VR	No. of hours: 60
UNIT I	**Introduction to AR and VR Animation**	**15**
	Overview of AR and VR technologies, Understanding the differences between AR and VR, Importance of animation in AR and VR experiences, Case studies of successful AR and VR animations, Fundamentals of animation (timing, spacing, squash and stretch, anticipation, etc.), Applying animation principles to 3D environments, Importance of user experience in AR and VR animations, Gestalt principles and their implications in AR and VR animation design	
UNIT II	**Unity or Unreal Engine**	**15**
	Introduction to Unity or Unreal Engine for AR/VR development, Understanding the interface and workflow, Importing assets and setting up scenes, Basics of scripting for animation control, Techniques for character rigging in Unity or Unreal Engine, Creating and animating humanoid characters, Implementing inverse kinematics (IK) for realistic character movement, Lip-syncing and facial animation techniques for immersive experiences	
UNIT III	**Interactivity and User Engagement**	**15**
	Principles of environmental animation in AR and VR, Creating dynamic and interactive environments, Particle systems for special effects, Implementing physics-based animations for realism, ntroduction to interactivity in AR and VR animations, Implementing user-driven animations, Understanding user input methods (gestures, controllers, gaze-based interactions), Designing animations for user engagement and immersion	
UNIT IV	**Optimization and Performance**	**15**
	Optimizing animations for AR and VR platforms, Techniques for reducing latency and motion sickness, LOD (Level of Detail)	

	techniques for efficient rendering, Performance profiling and debugging in Unity or Unreal Engine, Students work on a final project to create an animated AR or VR experience, Presentation of final projects, including demonstration and critique, Reflection on lessons learned and future directions in AR and VR animation	

Course Outcomes: After completion of syllabus, student will be able to:

1) proficiency in creating immersive animations specifically tailored for AR and VR platforms.
2) describe animation tools and software used in AR and VR development.
3) utilize spatial computing concepts and how they relate to animation design.
4) identify technical considerations such as performance optimization and frame rates for AR and VR animations.

References:

1. *Smith, John. Animating the Virtual: Principles of Animation for Augmented and Virtual Reality. Animation Press, 2020.*
2. *Lee, Alan. Creating Augmented and Virtual Realities: Theory and Practice for Animators. Routledge, 2018.*
3. *Johnson, Mark. Virtual Animation: Developing Narrative and Characters for AR and VR. Focal Press, 2016.*
4. *Chen, Alice. Augmented Reality for Developers: Design and Develop Real-World Applications with Apple's ARKit and Google's ARCore. Addison-Wesley Professional, 2018.*

MAST 543: ADVANCED COMPOSITING

Course Objectives: student should be able to:

1) organize projects in DaVinci Resolve 18.
2) practice advanced compositing techniques using plates from actual film projects.
3) implement advance editing features like color correction, audio editing and effects.
4) operate stereo compositing techniques and workflows.

Credits=4	MAST 543 : ADVANCED COMPOSITING	No. of hours: 60
UNIT I	**Introduction to Advance Compositing**	15
	Digital compositing, definition, Historical perspective, Judging Colour, Brightness, and Contrast, Light and Shadow, Digital Representation of visual information, pixel components and Channel, basic image manipulation, Colour manipulation, Spatial Filters, Geometric Transformations, Component Separation, sampling, Stereo Compositing, Multi-pass CGI Compositing, 3D Compositing.	
UNIT II	**Interface of DaVinci Resolve**	15
	Interface components, Project manager, Media pool, Navigation in software, trim edit mode, setting up the project, edit page, B-roll, duplicating timeline panel, trimming the timeline clips, rolling edits, Transitions, Titles, Effects, Timeline panel, Playback controls, Markers, Filters.	
UNIT III	**Editing and Colour Correction**	15
	Goals of colour grading, Setting the Tone, Quality Control, Balancing Scenes, Primary Colour Corrections, Understanding Video Scopes, Colour Correcting Using Lift, Gamma, and Gain, Automatic Adjustments, working with nodes, DaVinci Resolve Colour management, Adjusting Individual Colour Channels, Curves for Primary Colour Corrections, Visual Effects Compositing, Adding Elements, Sky Replacement, Performance/Cosmetic Fixes, Changing Locations, Wire Removal, Set Extensions, Effects in Fusion.	
UNIT IV	**Visual Effects and Exporting**	15
	The Fusion Interface, adding effect, Masking Effects, Export, Export Setting, Various file formats, working in the Deliver Page, Rendering Out a Web Streaming File, Creating a Custom Preset, Rendering Out Individual Clips, Managing Media and Project	

	Libraries, Consolidating Media, Exporting Timelines, Bins, and Projects.	

Course Outcomes: After completion of syllabus, student will be able to:

1) recognize and evaluate key visual effects technology.
2) create advanced visual effects.
3) implement various color grading techniques.
4) distinguish technique used in Advanced compositing.

References:

1. *The Beginner's Guide to DaVinci Resolve 18- Dion Scoppettuolo -2021.*
2. *Digital Compositing for Film and Video Third Edition - Steve Wright – 2010.*
3. *Digital Compositing in depth- Doug Kelly -2000.*
4. *The Art and Science of Digital Compositing- Ron Brinkmann – 1999.*

MAST 544 E I: CREATIVE ADVERTISING & BRANDING

Course Objectives: student should be able to:

1) study creative thinking skills.
2) understand brand strategy.
3) learn application of advertising principles.
4) aware of advertising campaigns from both creative and strategic perspectives.

Credits=4	MAST 544 E I : CREATIVE ADVERTISING & BRANDING	No. of hours: 6 0
UNIT I	**Introduction**	15
	What is Advertising? – Evolution - Advertising as a Communication Process- How and When Advertising works? Effective Advertising - Market Effects and Intensity of Advertising: Persuation, Argument and Emotions - Economic Effects of advertising - Advertising as a Business Process - Advertising in Business and Society	
UNIT II	**Creative Process in Advertising**	15
	Creativity - Creative Process in Advertising – Copy Writing and Craft of Copy Writing - Writing for Print, Visual and Radio - Art Direction – Production - Using the Media: Print, Visual and Radio - Advertising in the ICT age - Media Planning and Internet: Effective Use of New Media Tools, Planning and Organizing – Executing the Advertising Process - How to market - Do's and Don'ts of Advertising Techniques. Case Studies.	
UNIT III	**Elements of Branding**	15
	Elements of Branding – Brand Identity – Brand Image – Brand communication – Power Branding - Principles of Integrated Brand Promotion (IBP) - Planning Advertising and IBP - Basics of Brand	

	Management and Relationship with Contemporary Advertising - Planning and Organizing – Executing the Advertising Process - How the Brand Transforms the Business Goals and Vision? Brand Promotion and Strategic Brand Management - FOUR Steps in Brand building - Direct Marketing, Public Relations (PR) and Corporate Advertising for Brand Building - Sustaining and Growing the Brand after the Launch.	
UNIT IV	**Image and Brand Management**	**15**
	Corporate Image and Brand Management- IMC to build Brand Equity, Evaluating the Brand Performance, Capturing Market Performance, Design and Implementation of Brand Strategies, Brand – Product Matrix and Hierarchy Levels, Achieving the Ideal the Brand Portfolio, Managing Brands over: Time, Market Segments and Geographic Boundaries, Revitalising and Changing the Brand Portfolio, Media Selection, Trade Promotion and Selling, CRM, Personal Selling and Web Marketing.	

Course Outcomes: After completion of syllabus, student will be able to:

1) identify the concept and principles of Advertising.
2) utilize the skills of writing for advertising copy.
3) describe brand marketing with professional experience.
4) differentiate their capacity to build corporate image.

References:

1. *Advertising Basics – a resource guide for beginners, J V Vilanilam, A K Varghese, Response Books (a division of Sage Publications).*
2. *Advertising Management, Rajeev Batra, John. G. Myers and David. A. Aaker,Pub: Pearson.*
3. *Advertising Now! Online 2007 Edition by Julius Wiedemann , Taschen GmbH.*
4. *Futurist Advertising 2014 Edition by Emanuele Nenna , Viva Books.*

MAST 544 E II: UI UX DESIGNING

Course Objectives: student should be able to:

1) understand the various phases in Interface design process.
2) study the theories of user interface for digital platforms.
3) aware of the need, preferences, and behavior of target user.
4) learn intuitive interfaces.

Credits=4	MAST 544 E II : UI UX DESIGNING	No. of hours: 60
UNIT I	**Getting Started with UI/UX Design**	15
	Getting Started with UI/UX Design: Why Should one Learn UI/UX Design, What is User Interface (UI) Design?, What is User Experience (UX)? Design?, What is UI Development? An overview of the human experience design process - UX design to UI design, What is Big Picture? What is Persona in UX Design, 6 Stages used to design in UX, Heuristic Evaluation	
UNIT II	**UX Design**	15
	What us Design Thinking, What is Research in User Experience Design? What are design Principles, What is User Centered Design, Wire framing & Storyboarding, Learning Google Material Design, Role of a UX Designer Steps to Follow before UX Design: Requirement Gathering, Research of various techniques, Analysis, Creating Scenarios, Flow Diagrams, Flow Mapping, Making our first UX Design Road Map	
UNIT III	**UX Design Process**	15
	Design Testing Methods and Techniques. Usability Testing – Types and Process, Create plan for the Usability, What is Tests? What is Prototype and how we design it. Various Prototyping Tools, How to prepare Usability Testing? How to understand & refine Usability Test Results?	
UNIT IV	**UX Improvement Process**	15
	Understanding the Usability Test findings, Applying the Usability Test feedback in, improving the design UX Delivery Process: How to communicate with implementation team, UX Deliverables and its process	

Course Outcomes: After completion of syllabus, student will be able to:

1) describe the User interface and user experience design for digital platforms.
2) utilize the research in designing.
3) identify UI/UX tools.
4) differentiate the prototyping tools.

References:

1. *The Elements of User Experience — By Jesse James Garrett.*
2. *A Project Guide to UX Design: For user experience designers in the field or in the making (2nd Edition) — By Russ Unger & Carolyn Chandler.*
3. *The UX Book: Process and Guidelines for Ensuring a Quality User Experience (by Rex Hartson, Pardha Pyla）*
4. *Interaction Design: Beyond Human — Computer Interaction (by Preece, Sharp, and Rogers)*

MASP 545: On Job Training (OJT) (4 Credits)

OJT will provide the opportunities for internship with local/regional industries, business organization, health and allied areas, local government, etc. so that students may actively engaged with the employability opportunities. Students will undergo 4 credit work based learning/OJT/internship.

MASP 546 Practical (Based on MAST 541,542,543 courses)

Course Objectives: Student should be able to:-

1) Develop competence necessary for graduate students to be employed in the areas of information technology and the industry of game development.
2) Enable students to develop games individually and in teams.
3) Organize projects in DaVinci Resolve 18.
4) Practice advanced compositing techniques using plates from actual film projects.

Credits=2	**MASP 546**	**No. of hours per unit 30 Hrs.**
	1) To study of Import character in Unity Software. 2) To study of Animation character in Unity Software. 3) To study of Apply to material in Unity Software. 4) To study of creating a simple street scene in Unity software. 5) To study of How to create Road track using road architect in Unity. 6) To study of create environment background in Unity Software. 7) To study of making beautiful terrain in Unity Software. 8) Creating basic terrain in unity. 9) Sculpting, adding textures, adding trees and grass to the terrain using unity. 10) Creating a 3D character for your game. 11) Create a racing track for a 3D racing game. 12) Working with footages in DaVinci Resolve. 13) Edit video with DaVinci Resolve. 14) Multicam editing with DaVinci Resolve. 15) Adding Visual Effect in video in DaVinci Resolve. 16) Adding Video in Text in DaVinci Resolve. 17) Creating Grow effect in DaVinci Resolve. 18) Advance colour management in DaVinci Resolve. 19) Working with audio track layers in DaVinci Resolve. 20) Create a Speed Ramp Rewind Effect in DaVinci Resolve.	

Course outcomes: student will be able to:

1) utilize and evaluate key visual effects technology.
2) identify advanced visual effects.
3) describe various color grading techniques.
4) differentiate technique used in Advanced compositing.

References:

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